

Date: Monday, 10/23/2006 12:05:31 PM
 User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: CROSSTUBE EXTRUSION		
Job Number	: 29112					
Estimate Number	: 10028					
P.O. Number	: N/A		Part Number	: D6006129		
This Issue	: 10/23/2006	S.O. No. : N/A	Drawing Number	: D6006 REV A		
Prsht Rev.	: NC		Project Number	: N/A		
First Issue	: N/A		Drawing Revision	: A		
Previous Run	: 26550		Material	: N/A		
Written By	:		Due Date	: 1/30/2007 Qty: 8 Um: Each		
Checked & Approved By	:					
Comment	: Est Rev:C 04.06.15 Added tolerance to Step 2 KJ/JLM					

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
1.0	PG	PURCHASING
Comment: PURCHASING		
Issue P/O: <u>2339</u> <u>U</u> <u>06-10-25</u>		
a) Order as per Dwg D6006		
b) Material: 3.250 x 0.515 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube		
c) Minimum ultimate tensile strength = 77 ksi		
d) Minimum tensile yield strength = 66 ksi		
e) Tolerance are per ASTM B210 (see details on Dwg D6006)		
f) Material certification required		
2.0	D6006129P	Crosstube material
Comment: Qty.: 1.0000 Each(s)/Unit Total : 8.0000 Each(s) Crosstube material		
3.0	PACKAGING 1	PACKAGING RESOURCE #1
Comment: PACKAGING RESOURCE #1 Receive & Inspect For Transit Damage Ensure material certification is attached		
4.0	QC6	DIMENSIONAL CHECK
Comment: DIMENSIONAL CHECK Ensure Material certification comply to Dwg D6006		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: Date: 07/03/27
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 10/23/2006 12:05:31 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: CROSSTUBE EXTRUSION

Job Number: 29112

Part Number: D6006129

Job Number:



Seq. #:	Machine Or Operation:	Description :
5.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
	Comment: HAND FINISHING RESOURCE #1 Chemical Conversion Coat as per QSI 005 4.1	
6.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
	Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION	
7.0	PACKAGING 1	PACKAGING RESOURCE #1
	Comment: PACKAGING RESOURCE #1 Identify and Stock Location: M4T - 28	
8.0	QC21	FINAL INSPECTION/W/O RELEASE
		(10)
	Comment: FINAL INSPECTION/W/O RELEASE	

Job Completion



5/07/09 127

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

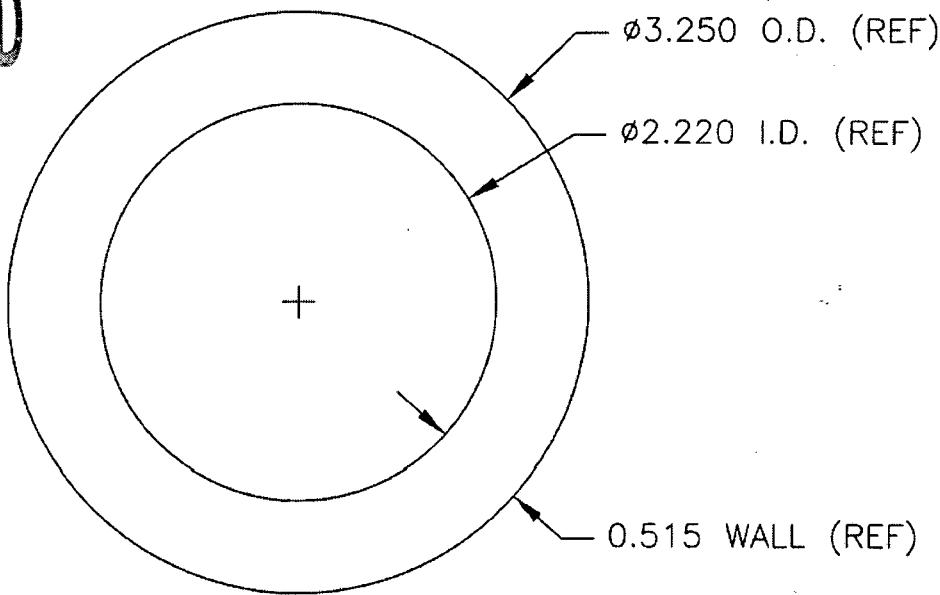
NOTE: Date & initial all entries

DART

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D6006 REV. A
DATE		SHEET 1 OF 1
00.11.17		TITLE CROSSTUBE MATERIAL SCALE 1:1
A	00.11.17	NEW ISSUE

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *[Signature]*



NOTES

- 1) D6006-XXX CROSSTUBE

LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 129" LONG TUBE: D6006-129

- 2) MATERIAL: 3.250 OD x 0.515 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.008 MEAN (± 0.016 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.052 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.188/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

SHOP COPY
RETURN TO
ENGINEER 225/9 OR
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *29112*

invoice
31742

 page: 4
 date: 2.16.2007
 customer 40980

Part Number D6005-128 crosstube
 Surface Finish max. RMS 25
 Tolerances per ASTM B210 / your drawing D6005
 Tubes protected with corrosion protective oil
 Tubes line marked
 Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit	value	USD
006	10,000	PC	578,64	PC	5.786,40	

AWU article: 17955 / Tariff no. 76082081
 Customer article: D6006-129 3.250 X 0.515 X 129
 product: TUBES / seamless extruded / EN AW-7075 / round
 condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	82,550 mm	Tol.	+0,410	-0,410
inner diameter:	56,390 mm			
wall thickness:	13,080 mm	Tol.	+1,320	-1,320
fixed length	3277,000 mm	Tol.	+4,775	

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455
 straightness 0,25 mm / 304,8 mm / RMS outer 25
 tol. on quantity +15 % -15 %
 3.250" OD 0.515" Wall, 129" lengths

Part Number D6006-129 crosstube
 Surface Finish max. RMS 25
 Tolerances per ASTM B210 / drawing D6006
 Tubes protected with corrosion protective oil
 Tubes line marked
 Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit	value	USD
007	24,000	PC	224,82	PC	5.395,68	

AWU article: 21693 / Tariff no. 76082081
 Customer article: D6007-106 2.250 X 0.350 X 106
 product: TUBES / seamless extruded / EN AW-7075 / round
 condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	57,150 mm	Tol.	+0,300	-0,300
tol. for mean OD			+0,150	-0,150
inner diameter:	39,370 mm			
wall thickness:	8,890 mm	Tol.	+0,890	-0,890
fixed length	2692,000 mm	Tol.	+3,175	

inspection cert.acc. to EN10204/3.1 / RM 531 / Rp0,2: 455
 straightness 0,25 mm / 304,8 mm / RMS outer 25
 tol. on quantity +15 % -15 %
 2.250" OD 0.350" Wall, 106" lengths

39.937.22

order confirmation
21531

 page: 4
 date: 11.02.2006
 customer 40980

Surface Finish max. RMS 25

Tolerances per ASTM B210 / your drawing D6005

Tubes protected with corrosion protective oil

Tubes line marked

Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit value	USD	delivery
006	8,000	PC	578,64	PC	4.629,12	March 16, 2007

AWU article: 17955 / Tariff no. 76082081

Customer article: D6006-129 3.250 X 0.515 X 129

 product: TUBES / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11

outer diameter: 3,250 INCH Tol.

+0,016 -0,016

inner diameter: 2,220 INCH

+0,052 -0,052

wall thickness: 0,515 INCH Tol.

+0,188

fixed length 129,000 INCH Tol.

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,01 INCH / 1 FEET / RMS outer 25

tol. on quantity +15 % -15 %

3.250" OD 0.515" Wall, 129" lengths

Part Number D6006-129 crosstube

Surface Finish max. RMS 25

Tolerances per ASTM B210 / drawing D6006

Tubes protected with corrosion protective oil

Tubes line marked

Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit value	USD	delivery
007	22,000	PC	224,82	PC	4.946,04	March 16, 2007

AWU article: 21693 / Tariff no. 76082081

Customer article: D6007-106 2.250 X 0.350 X 106

 product: TUBES / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11

outer diameter: 2,250 INCH Tol.

+0,012 -0,012

tol. for mean OD

+0,006 -0,006

inner diameter: 1,550 INCH

+0,035 -0,035

wall thickness: 0,350 INCH Tol.

+0,125

fixed length 106,000 INCH Tol.

inspection cert.acc. to EN10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,01 INCH / 1 FEET / RMS outer 25

tol. on quantity +15 % -15 %

2.250" OD 0.350"Wall, 106" lengths

Part Number D6007-106 crosstube

Packinglist ALUnna AG

Customer PO	P.O.00002339
ALUnna ref. no.	21531/6
Date:	02.15.07

**We hereby declare that the wooden packing material are totally free from bark and apparently
free from live plant pests**

Boxmarking:

Dart Aerospace P.O.00002339 Box No...
D6006-129 Made in Germany
Dest.Hawkesbury ONT Canada

Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

Kunde: Client:	Dart Aerospace Ltd.	Zeugnisnummer: Cert No.: / No. du certificat:	195/07
	1270 Aberdeen Street K6A1K7 Hawkesbury, ON Canada	Bestellnummer: Order No. / No. de commande	PO 00002339
Produkt: Product / Produit:	Rohre nahtlos gepresst Tubes seamless extruded	Auftrag: Our Reference/Notre Reference:	21531/6
Spezifikation: Specification:	AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace D6006		
Werkstoff: Alloy/Alliage:	7075	Zustand: Temper/État	T 6511
Abmessung Size / Dimension	3,250 INCH x 2,220 INCH x 0,515 INCH x 129,000 INCH D6006-129 3.250 X 0.515 X 129		
Kennzeichnung Marking/Marquage:	ALUnna-Cert No.195/07-7075-T6511-Cast No.01604562-AMS-QQA200/11-3.250" OD X 0.515" Wall-Heat No.4200-Lot21531/6-1-P.O.00002339		
Lieferung Delivered Material / Matériel délivré:	pcs. 10	lbs 569	Country of Manufacture: Germany

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ Cast No.	min.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
	max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
01604562		0,1	0,26	1,42	0,07	2,41	0,18	5,83	0,04	0	0			0,0001

Hydrogen content: <0,15 ccm/100 g Al

Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
	min. max.	77,0	66,0			
1	83,810	78,010	12,0		170	4200 - 10 pcs.
2	81,925	75,400	12,0		169	

RMS: outside 25 - max. 17,5 μ "

Ergebnis der Prüfungen: Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats: Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KroosD



Certified acc. to DIN EN ISO 9001:2000, valid until 2009-03-27
Certificate No.: 001959 QM

15.02.2007



ALUnna
Abnahmebeauftragter